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**SOLDIER DIMENSIONS AND OPERATIONAL READINESS  
IN U.S. ARMY FORCES DEPLOYED TO KOSOVO**

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## **ABSTRACT**

The impact of military deployments on soldiers has been assessed from combat to peacekeeping to humanitarian missions. In a recent study of U.S. Army units deployed to Kosovo in support of a multinational peacekeeping mission, soldier attitudes and health were surveyed on site, mid-way during a 6-month deployment. In all, 1,718 soldiers were surveyed, 53.0% were junior enlisted, 34.5% were non-commissioned officers, and 12.5% were officers. In addition, 15 focused soldier and leader interviews were conducted. Key findings included: (a) Soldiers in Kosovo experienced nearly four times the number of traumatic events as U.S. soldiers deployed to Bosnia. Soldiers in Kosovo who experienced violent or traumatic events had higher rates of depression, slept less, and were under higher strain compared to soldiers who did not have such experiences. (b) Soldiers' attitudes about peacekeeping missions and military deployments became more negative over the course of the Kosovo deployment. (c) Compared to soldiers in garrison (Europe), soldiers deployed to Kosovo were healthy, and they reported fewer physical health symptoms. (d) Morale was high. (e) Confidence in leadership was high, although it declined somewhat during the deployment. These findings indicate that deployments involving peacekeeping operations can impact readiness on a broad range of soldier dimensions. These effects, however, can be both positive and negative. Only by addressing and understanding both aspects of a deployment will we be able to ensure that soldier and unit readiness remains high.

## **KEY WORDS**

Military Deployments, Health, Well Being, Psychology, Stress, Leadership

## **INTRODUCTION**

The U.S. military has participated in numerous military operations (see 1). Indeed, in the past fifty years, the U.S. Army has participated in fifty-six operations that have spanned the military spectrum from peace support to combat missions. Peace support operations have involved domestic and disaster relief, humanitarian assistance, arms control, security assistance, counter terrorist, and peace enforcement operations. Combat operations have included military raids, air strikes, insurgencies and counter insurgencies, and regional conventional war. In the last 10 years, the number of military deployments that the U.S. Army has participated in has increased six-fold. From 1950 to 1989 (a period of forty years), the U.S. Army participated in 11 deployments, or about one deployment every 4 years. In the last 10 years (1990 to 1999), the U.S. Army participated in 45 deployments, or about one deployment every two and one-half months.

The number of missions for which the U.S. military has supported is remarkable. Some examples of recently completed peace support operations involving the U.S. Army include (a) domestic disaster relief following Hurricanes Andrew and Inike in 1992, the Midwest Floods in 1993, and forest fires in the Western U.S. in 1994; (b) humanitarian assistance following the earthquake in Taiwan in 1996 and civil unrest in Rwanda and Haiti in 1994; and (c) peacekeeping missions in Macedonia (1993-1999) and Croatia (1992). Similarly, the U.S. military has also engaged in numerous combat operations. Since 1990, the U.S. Army has participated in combat missions in Honduras and Panama (1989-1990), Iraq (1991 to present), Kuwait (1991), Somalia (1992-1994), and Serbia (1999).

Presently, the U.S. Army is supporting peacekeeping operations in the Sinai, Haiti, Kuwait, Bosnia, and Kosovo. The impact that these deployments have had on the attitudes and

well-being of U.S. soldiers has been the subject of several investigations (2-11).

Similarly, peacekeepers from other nations have been the subject of several studies examining the impact of peacekeeping missions on soldier well-being. For example, the well-being of Swedish soldiers (e.g., 12, 13 as cited in 14, 15, 16 as cited in 14), Danish soldiers (e.g., 17 as cited in 14, 18), Dutch soldiers (e.g., 19), Portuguese soldiers (e.g., 20) and Canadian soldiers (e.g., 21, 22 as cited in 14) deployed to the former Republic of Yugoslavia (Bosnia and/or Croatia) have been investigated.

In this report we present the findings of the most recent investigation completed by U.S. Army scientists involving U.S. soldiers deployed to Kosovo. Kosovo is a province of Serbia and Montenegro, and is located in southern and southwestern Serbia. The provincial capital of Kosovo is the city of Pristina. The U.S. sector is in southeast Kosovo, with the headquarters for the U.S. forces located at Camp Bondsteel, near Urosevic. The primary mission in Kosovo is to maintain a stable and secure environment, with the ultimate goal of establishing a peaceful, multi-ethnic, and democratic Kosovo. The U.S. forces in Kosovo help to maintain a capable military force in Kosovo and ensure the safe return of Kosovar refugees.

## METHODS

***Soldiers and Units.*** U.S. soldiers stationed in the U.S. sector of Kosovo participated in the study. The majority of the soldiers who deployed to Kosovo did so from various garrison locations throughout Germany. In all, 1,718 soldiers were surveyed and 15 soldier and leader interviews were conducted. Soldiers were located at Camp Bondsteel, near Urosevic (47.7% of sample), Camp Monteith, near Gjilane (24.2%) or at one of the numerous remote sites (26.6%) within the U.S. sector. Over 87% of the sample were enlisted soldiers (53.0% were junior

enlisted and 34.5% were non-commissioned officers) and 12.5% of the sample were officers. Sixty-three percent of the soldiers were from combat units, with 28.9% and 7.3% of the soldiers assigned to combat support and combat service support units, respectively. Of the soldiers assessed, 53.7% were married, 37.2% were single, and 9.0% were either separated or divorced. Ninety-three percent of the soldiers were males and 7% were females.

**Research Team.** A Soldier Dimensions Research Team from Heidelberg, Germany, consisting of two U.S. military scientists (officers) and one non-commissioned officer, deployed to Kosovo to collect the data described in this report. The surveys were administered on site at either Camp Bondsteel, Camp Monteith, or at one of the remote locations in the U.S. sector. Interviews and observations occurred at all locations.

**Comparison Data Sets.** Prior to the soldiers' deployment to Kosovo, we conducted a pre-deployment assessment in which 2,094 soldiers completed a survey that assessed numerous soldier dimensions, including soldier attitudes toward the mission in Kosovo and their unit's readiness for the mission. It is important to note that this survey was completed approximately six weeks before the soldiers in the unit were notified that they were indeed deploying to Kosovo. This is important since usually pre-deployment assessments are not conducted until after the soldiers (and units) have been notified that they are deploying. The mid-deployment survey, which was administered 3 months into the deployment, contained scales and items not in the pre-deployment assessment. When scales and items were contained in both surveys, direct comparisons were made. Several items and scales used in the mid-deployment assessment were also used in previous studies of U.S. soldiers in garrison – Europe (4), in garrison – U.S. (23), or deployed on a peacekeeping mission to Bosnia (4). Where appropriate, the findings from the mid-deployment assessment are compared to these studies.

**Survey Instrument.** The questionnaire used for the Kosovo mid-deployment assessment consisted of previously validated scales, as well as items and/or scales specifically developed for research with soldiers deploying to Kosovo. The survey instrument consisted of four sections. The first section contained items regarding soldier attitudes about military deployments and peacekeeping missions. Two items addressed soldier attitudes about military deployment scheduling: (1) "In your opinion, what is the ideal length of time in months that a deployment should last?" and (2) "In your opinion, what is the ideal number of deployments that a soldier should go on over a 3 year period?" (The length of time that a soldier is typically assigned to the U.S. Army in Europe.) An 11-item peacekeeping attitudes scale was used to assess soldiers' attitudes toward peacekeeping missions. Items in the peacekeeping attitudes scale included "I feel comfortable in the role of peacekeeper" and "It is hard to go from a 'combat routine' to a 'peacekeeping routine.'" These items were scored on a 5-point scale (1=strongly disagree, 2=disagree, 3=neutral, 4=agree, 5=strongly agree).

The second section addressed soldier attitudes about their unit's operational readiness and leadership. Operational Readiness was assessed using a three-item scale: (1) "My company is ready for combat," (2) "I am confident in my unit's mission-essential equipment," and (3) "I think we are better trained than most other companies in the Army" (Cronbach's Alpha = 0.81). Unit leadership was assessed using the three-item General Leadership Quality Scale: (1) "The leaders in this company would lead well in combat," (2) "I am impressed by the quality of leadership in this company," and (3) "My chain of command works well" (Cronbach's Alpha = 0.90). Both of these scales were adapted from Marlowe and colleagues (24) and Vaitkus (25), and are scored on a 5-point scale (1=strongly disagree, 2=disagree, 3=neutral, 4=agree, 5=strongly agree).

The third section measured the deployment environment of the soldiers: Workload, deployment experiences, and deployment stressors. Soldier workload was assessed at both pre- and mid-deployment through questions about the number of days the soldier worked in the past week, the number of hours soldiers worked per day in the last week, and the number of hours of sleep soldiers averaged per night during the past week. Deployment experiences were assessed using an 16-item scale, which listed experiences such as “been shot at,” “saw dead or injured civilians,” and “witnessing abuse of the local population by the warring factions.” The response option for the deployment experiences scale was yes and no. Deployment stressors were measured using nine items, which included “uncertain redeployment date,” “concerns about mines or unexploded ordnance,” and “health problems of family member.” Deployment stressors were scored on a five-point scale (1=very low, 2=low, 3=medium, 4=high, 5=very high).

Soldier well being was assessed in the final section. These scales were only on the mid-deployment survey. The psychological and physical health of the soldier was assessed using four scales. Soldier morale was measured using an 11-item scale (adapted from 23; Cronbach’s Alpha = 0.85). Soldiers were asked to rate items such as “your personal morale,” “morale in your unit,” “cohesion in your unit,” and “your level of burnout” (reversed scored). The morale items were scored on a 5-point scale (1=very low, 2= low, 3=medium, 4=high, 5=very high). Soldier well being was assessed using the 12-item General Health Questionnaire (26), which was scored on a four-point scale (0=not at all, 1=no more than usual, 2=rather more than usual, 3=much more than usual). Items included “lost much sleep over worry,” “felt constantly under strain,” and “been feeling unhappy or depressed.” Depression was measured by a 7-item scale adapted from Radloff’s (27) Center for Epidemiological Studies-Depression (CES-D) scale (see



28). The modified version of the scale correlates .92 with the full CES-D (29). Depression symptoms were rated according to how many days the symptoms had been experienced in the past week. Items included "felt sad," "felt lonely," and "trouble keeping your mind on what you were doing." Response options were 0 to 7 days. Scale reliability was high (Cronbach's Alpha = 0.90). Physical health was measured using the 24-item Physical Health Questionnaire (e.g., 7). The items cover a range of physical health symptoms including head colds, back problems, allergies, skin rash, and dizziness. Each symptom is rated on a four-point scale (no, a little, often, and very often).

***Interviews/Observations.*** Semi-structured interviews were conducted at the company level. Individual interviews were conducted with the company commander and the First Sergeant. Group interviews were conducted with junior-enlisted soldiers (privates to specialists) and non-commissioned officers. A total of 15 officers and enlisted soldiers were interviewed. The interviews focused on the Kosovo mission, the soldier's perspective on mission success, unit climate, leadership, and the deployed environment. Officers and soldiers were also given the opportunity to discuss any issue that they believed important.

Members of the Soldier Dimensions Research Team also had informal and formal conversations with staff officers assigned to the U.S. task force headquarters in Kosovo (Task Force Falcon). These conversations were extremely helpful in providing the research team with important information about the deployed environment and the operational history of the units before and during the deployment. A member of the research team also attended the daily Battle Update Briefs in order to obtain current operational information.

***Data Analysis.*** When the same survey scale or items were used at both pre-deployment and mid-deployment, the McNemar chi-square for paired samples or paired-samples t-test was

used to compare changes over time. When the item or scale was only used during the mid-deployment assessment chi-squares or independent sample t-tests were used. Statistical level of significance was set at .05.

## FINDINGS

***Soldier Attitudes: Military Deployments and Peacekeeping Missions.*** Soldiers reported that deploying 1 to 2 times within a three-year period, with deployments lasting approximately 5 months, was preferred. Prior to deploying to Kosovo soldiers reported that deployments should on average last 5.4 months compared to 5.0 months when asked during the deployment,  $t(360) = 3.02, p < .01$ ). Similarly, soldiers reported that there should be fewer deployments when they responded during the deployment than prior to the deployment,  $t(358) = 9.98, p < .01$ ). Before deploying to Kosovo (pre-deployment), soldiers reported that on average 2.1 deployments was ideal, compared to 1.6 deployments when asked during the deployment (mid-deployment).

Figure 1 shows soldiers' attitudes about peacekeeping missions before deploying to Kosovo (pre-deployment) and while in Kosovo (mid-deployment). At the mid-deployment assessment in Kosovo, more soldiers expressed a negative view of peacekeeping missions when compared to soldiers at the pre-deployment assessment. For instance, soldiers at mid-deployment were less likely to agree that the role of peacekeeper was relevant to their training  $X^2(1, N = 359), p < .01$ . Soldiers at mid-deployment were also more likely to agree than at pre-deployment that the guidelines for how to act on a peacekeeping mission are too unclear,  $X^2(1, N = 359), p < .01$ , that it is hard to go from a combat routine to a peacekeeping routine,  $X^2(1, N = 355), p < .01$ , and that there would always be conflict in the former Yugoslavia despite peacekeeping efforts  $X^2(1, N = 355), p < .05$ .

Soldiers' attitudes about the ethnic conflict in Kosovo were also discussed during the focus interviews. The findings from the interviews confirmed that both leaders and soldiers believed that there was little prospect for mission success in Kosovo. Soldiers noted extreme hostility remaining between the Albanian and Serb ethnic groups. Soldiers stated that the Albanian Kosovars were intent on inflicting revenge on both the Serbs and gypsies (Roma) for the harm that was inflicted on them during the Serbian occupation. All the soldiers interviewed expressed doubt that these groups would be able to live together in peace without the presence of a peacekeeping force. For this reason, many soldiers felt that the peacekeeping mission was "a waste of time" and that the U.S. should not be involved; while at the same time they recognized that the presence of the U.S. was, indeed, ensuring the peace in Kosovo.

***Operational Readiness and Leadership.*** Soldiers' views regarding how the Kosovo deployment impacted their unit's readiness is shown in Figure 2. Overall, soldiers deployed to Kosovo reported that their unit's operational readiness was high, and that it was higher in Kosovo than before they deployed,  $t(360,361) = 2.65, p < .01$ ). Interview findings and conversations with staff officers at Task Force Falcon revealed that prior to deploying to Kosovo units in the task force spent over six months of intensive training in preparation for the Kosovo mission. Indeed, many officers and soldiers felt that they were "over prepared" for the Kosovo mission. Despite the perception that their unit's operational readiness was high, soldiers did state during the interviews that it was difficult for them to obtain parts for their heavy equipment. Soldiers believed that these maintenance issues impaired their ability to perform their mission.

Soldiers' confidence in unit leadership was higher at pre-deployment than at mid-deployment,  $t(355,356) = 5.24, p < .01$ . During the Kosovo deployment, soldiers reported being less impressed with the quality of leadership in their unit,  $X^2(1,355), p < .01$ , and reported that

the chain-of-command functioned less well,  $X^2(1,353)$ ,  $p < .01$ , than before the deployment (see Figure 3). This decline was found across all rank groups. However, both the Kosovo pre- and mid-deployment assessments of leadership appeared higher than the garrison norm for soldiers stationed in the U.S. (see Figure 3).

Although leadership ratings declined overall, attitudes regarding leadership were rather positive. Consistent with this survey finding, each soldier and leader interviewed expressed very positive views of the local leadership. Company commanders and first sergeants were extremely proud of the leadership abilities displayed by the platoon leaders and sergeants, and the squad leaders. Importantly, junior-enlisted soldiers also expressed profound satisfaction with the leadership of the officers and non-commissioned officers in their company. Nevertheless, the interviews also helped to explain the decline in soldiers' confidence in unit leadership at mid-deployment. Both officers and enlisted soldiers were dissatisfied with the rotation of officers at the company level. Company commanders and platoon leaders were changed or rotated to different positions during the deployment. Soldiers and non-commissioned officers stated that they would have preferred fewer turnovers among unit officers during peacekeeping missions, especially since the deployment was only six months.

Officers and enlisted soldiers were also dissatisfied with the K+90 negotiations. According to the original negotiations that ended the NATO air war in Yugoslavia, the Kosovar Albanians were to turn in all their weapons within 90 days after the Serbians withdrew from Kosovo. However, subsequent negotiations permitted a force of Kosovar Albanians to retain small arms weapons. The soldiers and officers we interviewed were upset with this outcome. They expressed the view that an armed Albanian force made their peacekeeping environment in

Kosovo more dangerous. Many soldiers openly expressed that they felt betrayed by the senior civilian and military leadership.

*The Deployed Environment: Workload and Deployment Experiences.* Soldiers deployed to Kosovo reported working longer hours,  $t(345) = -10.79, p < 0.01$ , and more days per week,  $t(344) = 10.79, p < 0.01$ , compared to when they were in garrison (i.e., pre-deployment). Soldiers reported working an average of 44.8 hours per week while in garrison before the deployment to Kosovo and 83.2 hours per week while deployed. Despite this near doubling in their workload while deployed to Kosovo, the number of hours that soldiers reported sleeping did not significantly change. Before deploying to Kosovo, soldiers reported sleeping an average of 6.1 hours per night compared to 6.0 hours per night during the deployment.

Soldiers deployed to Kosovo also reported more exposure to deployment experiences (e.g., traumatic or violent events) than soldiers deployed to Bosnia in support of Operation Joint Endeavor. Indeed, soldiers deployed to Kosovo experienced nearly 4 times the number of traumatic or violent events than soldiers deployed to Bosnia in 1996. Specifically, soldiers in Kosovo reported being shot at, seeing dead or injured civilians, having contact with traumatized civilians, and witnessing abuse of the local population by the warring factions at higher rates than did soldiers deployed to Bosnia (see Figure 4). Indeed, soldiers deployed to Kosovo reported during the interviews that finding dead bodies was almost a daily occurrence. Often the bodies were badly mangled, including having been cut in two by a chain saw or having been decapitated.

Figure 5 shows the top concerns or stressors reported by soldiers deployed to Kosovo and Bosnia. Interestingly, the top concerns expressed by soldiers deployed to Kosovo were similar to those reported by soldiers deployed to Bosnia. The three most often reported concerns for

Kosovo soldiers was uncertain redeployment date, boring and repetitive work, and concerns about mines and unexploded ordnance. These were also the three most often reported concerns for soldiers deployed to Bosnia. Moreover, family issues also were important concerns for deployed soldiers. Soldiers deployed to both Kosovo and Bosnia reported concerns about the rear detachment taking care of their families, health problems of family members, and arguments with their spouse over the telephone.

Family issues were also of concern to soldiers during the interviews. The operations tempo and personnel tempo of their unit were high. Prior to deploying to Kosovo the unit had spent months away from their family on training exercises. This resulted in soldiers being able to spend very little time with their families before the Kosovo deployment. Soldiers believed that family stability and marriages were beginning to be adversely affected by the combination of the high rate of deployments and training exercises.

***Well Being: Psychological and Physical Health.*** The morale of the soldiers deployed to Kosovo was excellent. Over two-thirds (70.0%) of the soldiers deployed to Kosovo reported that their morale was medium to very high. Despite high morale, soldiers did indicate that they were beginning to feel the impact of the deployment. Three-quarters (75.5%) of the soldiers reported that their level of burnout was medium, high or very high.

Interviewed soldiers reported that they would have liked to receive passes that allowed them to visit local communities during their off-duty hours, a privilege that earlier U.S. forces deployed in Kosovo enjoyed. The soldiers stated that their relationships with the different local ethnic groups were generally positive and that the communities were relatively safe for U.S. soldiers. Thus, the soldiers felt that passes should be allowed.

Figure 6 shows the mean depression scores of soldiers deployed to Kosovo, Bosnia, and soldiers stationed in garrison - Europe. Soldiers deployed to Kosovo had depression scores similar to soldiers in Garrison - Europe. Both the soldiers in garrison - Europe and those deployed to Kosovo appeared to have lower depression scores than did those soldiers deployed to Bosnia.

Soldiers deployed to Kosovo, however, who reported exposure to violent or traumatic events, had elevated rates of depression,  $t(1718) = -3.25, p < .01$ . Soldiers who saw dead or injured civilians were more likely to report that they lost sleep,  $t(1,678) = 6.29, p < .01$ , were constantly under strain,  $t(1,703) = 2.72, p < .01$ , and were depressed,  $t(1,708) = 3.33, p < .01$ , (see Figure 7). Surprisingly, there were no significant differences in depression scores for soldiers who had aided in the removal of unexploded ordnance,  $t(1,701) = 1.33, p = 0.18$ , or the removal of human remains and body parts,  $t(1,703) = -1.38, p = 0.17$ .

Soldiers deployed to Kosovo reported similar physical symptoms to that reported by soldiers in garrison - Europe. Soldiers in Kosovo reported an average of 2.1 physical symptoms and soldiers in garrison - Europe reported 2.1 symptoms,  $t(2,356) = 0.53, n.s.$ . Soldiers deployed to Kosovo, however, did report more stomach/intestinal upset and diarrhea, and more weight loss/gain than soldiers in garrison - Europe did (see Figure 8). Conversely, soldiers in Kosovo reported fewer muscle aches and fewer aching joints compared to soldiers in garrison - Europe.

## DISCUSSION

The findings from this study demonstrate that U.S. soldiers serving on the peacekeeping mission in Kosovo were impacted on a broad-spectrum of soldier dimensions. Compared to pre-

deployment, soldiers half-way into a 6 month deployment believed that there should be fewer military deployments and that the deployments should be of shorter duration. Soldiers' attitudes about peacekeeping missions also became more negative as a result of deploying to Kosovo. However, compared to soldiers deployed to Bosnia, the peacekeeping attitudes of soldiers deployed to Kosovo (mid-deployment) were slightly more positive. For example, while 36.2% of the soldiers deployed to Kosovo believed that peacekeeping missions were relevant to their training, only 25.2% of the soldiers deployed to Bosnia thought so. Similarly, while 47.0% of the soldiers deployed to Bosnia reported that peacekeeping missions took away the "fighting edge," only 44.8% of the soldiers deployed to Kosovo did. This "less negative" view of peacekeeping missions by U.S. soldiers might reflect the beginning of a cultural shift in soldier attitudes regarding peacekeeping (see also 30). With peacekeeping missions becoming more and more common, these data suggest that soldiers are starting to accept these types of missions as relevant to their role as U.S. soldiers.

In general, the soldiers in Kosovo had a very positive view of their unit's operational readiness and a positive view of their leaders, despite a slight decline in confidence from pre-deployment to mid-deployment. Indeed, the level of confidence in the leadership that Kosovo soldiers' reported was one of the highest ever recorded for U.S. soldiers (see 31). Compared to soldiers stationed in the U.S., Kosovo soldiers rated the leadership of their company nearly twice as high. It should be noted, however, that soldiers in Kosovo did not have a very high opinion of the senior leadership. That soldiers on peacekeeping missions viewed the local unit leadership favorably but not the senior leadership was also found for UN soldiers deployed to the former Yugoslavia (32 cited in 14).



The context of the deployment produced a unique set of changes. At mid-deployment, soldiers reported working very hard, with long hours almost every day of the week. This pace of operations was not immediately identified as harmful, but the different type of peacekeeping experiences reported was. Exposure to certain kinds of peacekeeping mission-related events was associated with decreased well being, suggesting the need for targeting at risk soldiers with pre-deployment training in order to cope with such events and with post-exposure prevention programs during and following the deployment.

Like with any highly challenging experience, the impact of the Kosovo deployment on U.S. soldiers is multi-dimensional, and can be both positive and negative. In the case of the Kosovo deployment, the findings indicate that an appreciation for both aspects is necessary in order to ensure that soldier readiness remains high. The degree to which these results apply to current and future peacekeeping deployments is unknown because peacekeeping missions can differ in terms of soldier dimensions. Nevertheless, there are indicators that attitudes toward leadership may be a commonality across deployed environments, while attitudes about peacekeeping missions appear to be shifting over time. The stressors of peacekeeping may also apply across deployments. The difference in frequency and intensity of traumatic events, however, suggest a variable critical to understanding and applying lessons learned from other deployments. The Kosovo post-deployment findings, to be reported separately, will provide a critical perspective for how soldiers' attitudes and well being shift over the entire deployment cycle.

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## Figure Captions

Figure 1. Soldier attitudes about peacekeeping missions in Kosovo at pre-deployment and mid-deployment.

Figure 2. Percent of soldiers agreeing with operational readiness statements at Kosovo pre- and mid-deployment compared to soldiers in Garrison-Europe.

Figure 3. Percent of soldiers agreeing with leadership statements at Kosovo pre- and mid-deployment compared to soldiers in the U.S. (Garrison-U.S.).

Figure 4. Percent of soldiers deployed to Kosovo (mid-deployment) and Bosnia (mid-deployment) who reported experiencing potentially traumatic events.

Figure 5. Deployment stressors of soldiers deployed to Kosovo (mid-deployment) and Bosnia (mid-deployment).

Figure 6. Mean depression score on the Center for Epidemiological Studies-Depression (CES-D) scale for soldiers deployed to Kosovo (mid-deployment), Bosnia (mid-deployment) and in garrison-Europe.

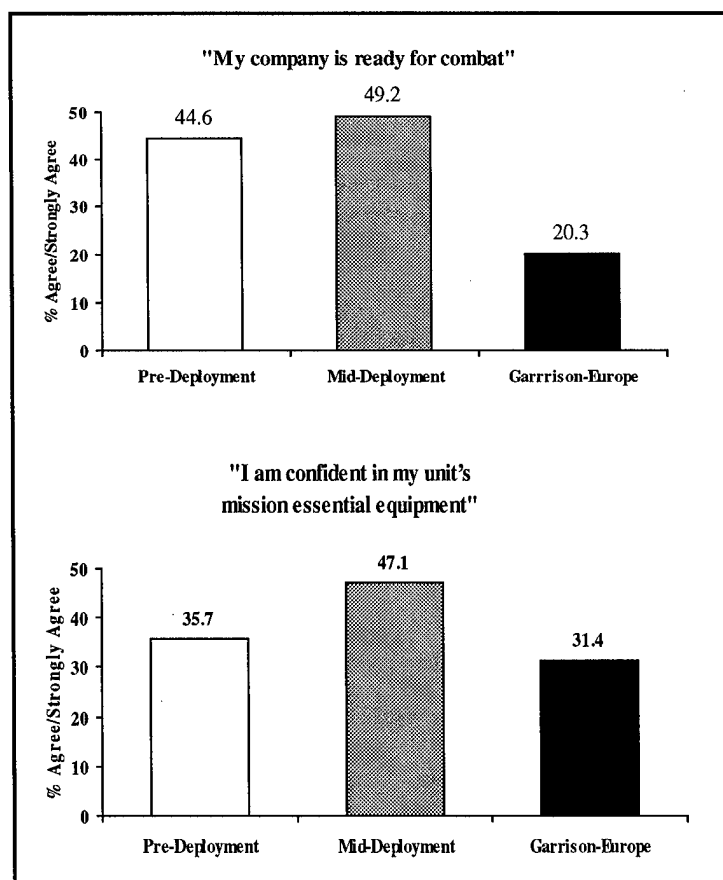
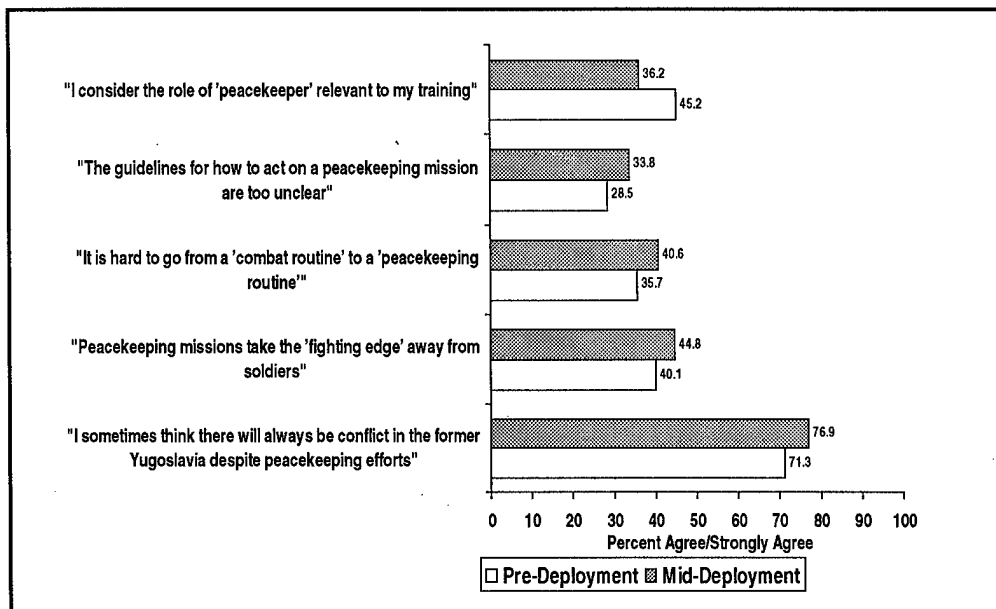
Figure 7. Percent of soldiers reporting psychological symptoms as measured by the General Well Being scale as a function of whether they did or did not see dead or injured civilians.

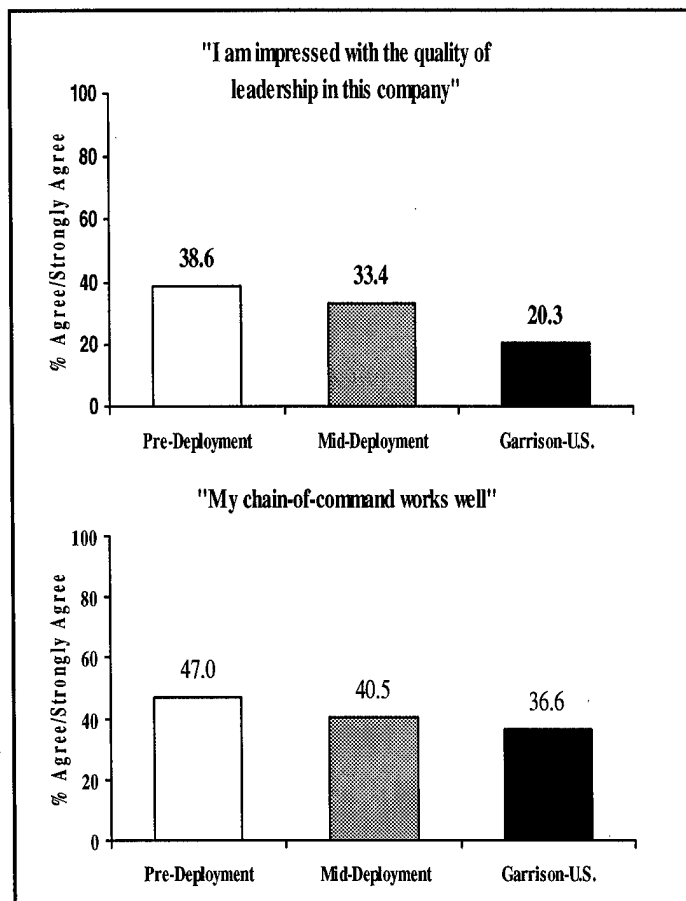
Figure 8. Physical health symptoms reported by soldiers deployed to Kosovo (mid-deployment) and in garrison (Europe).

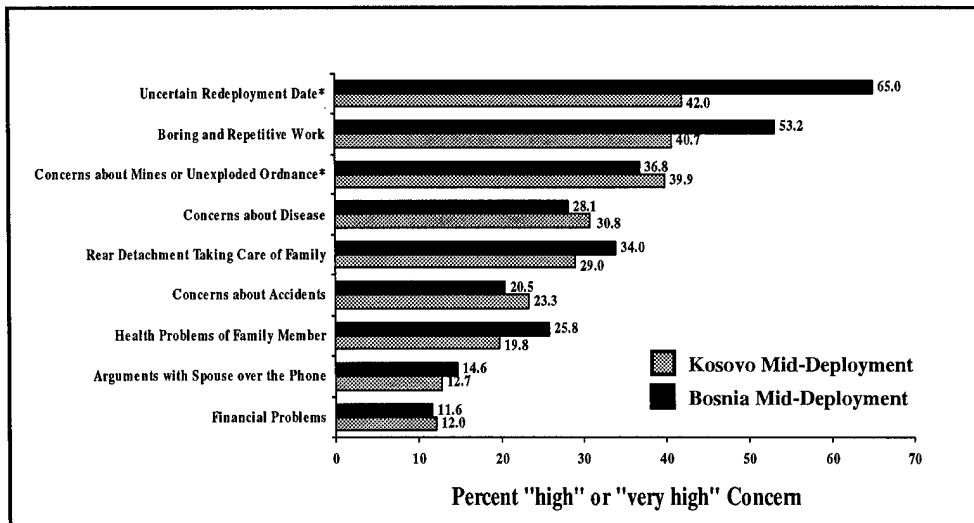
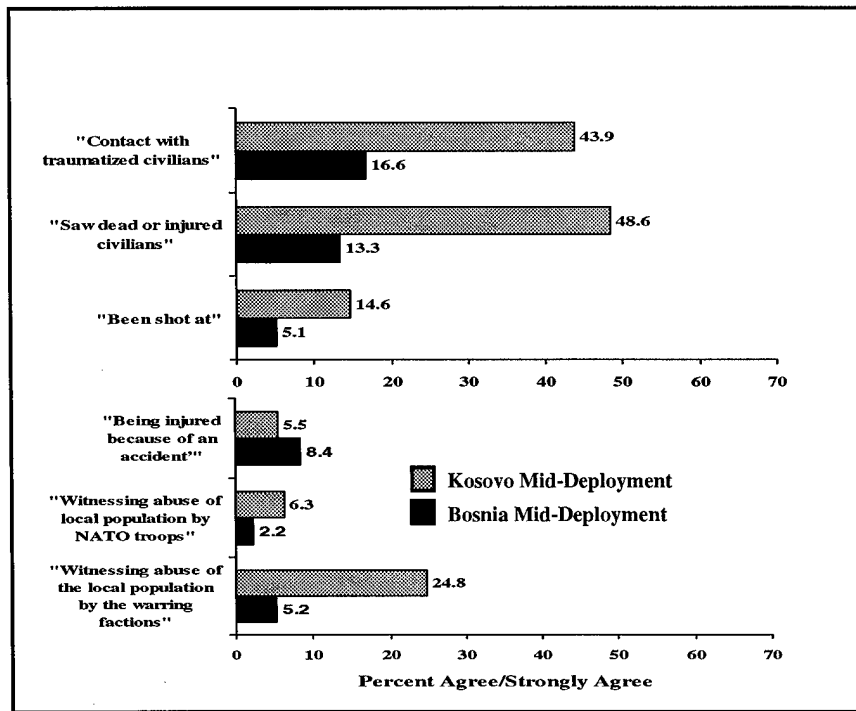
## **BIOGRAPHY**

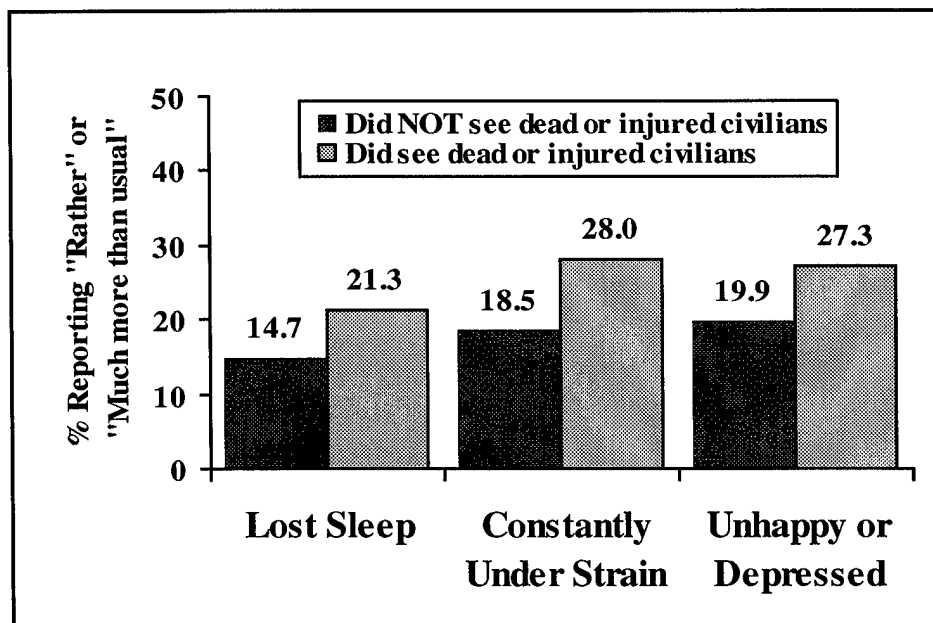
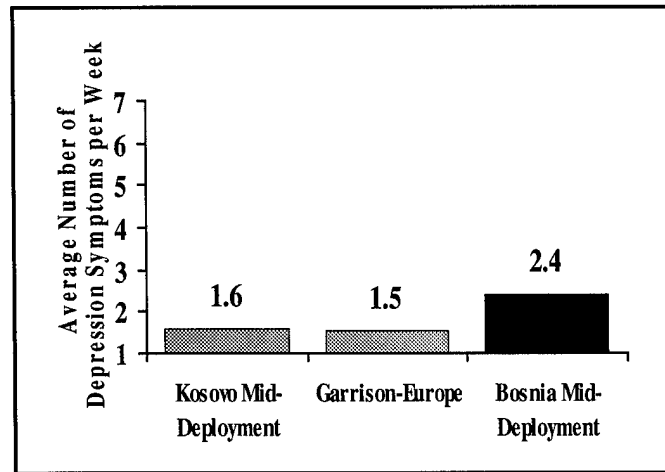
MAJ CARL A. CASTRO is Commander of the U.S. Army Medical Research Unit-Europe. He received his B.A. from Wichita State University, and his M.A. and Ph.D. from the University of Colorado

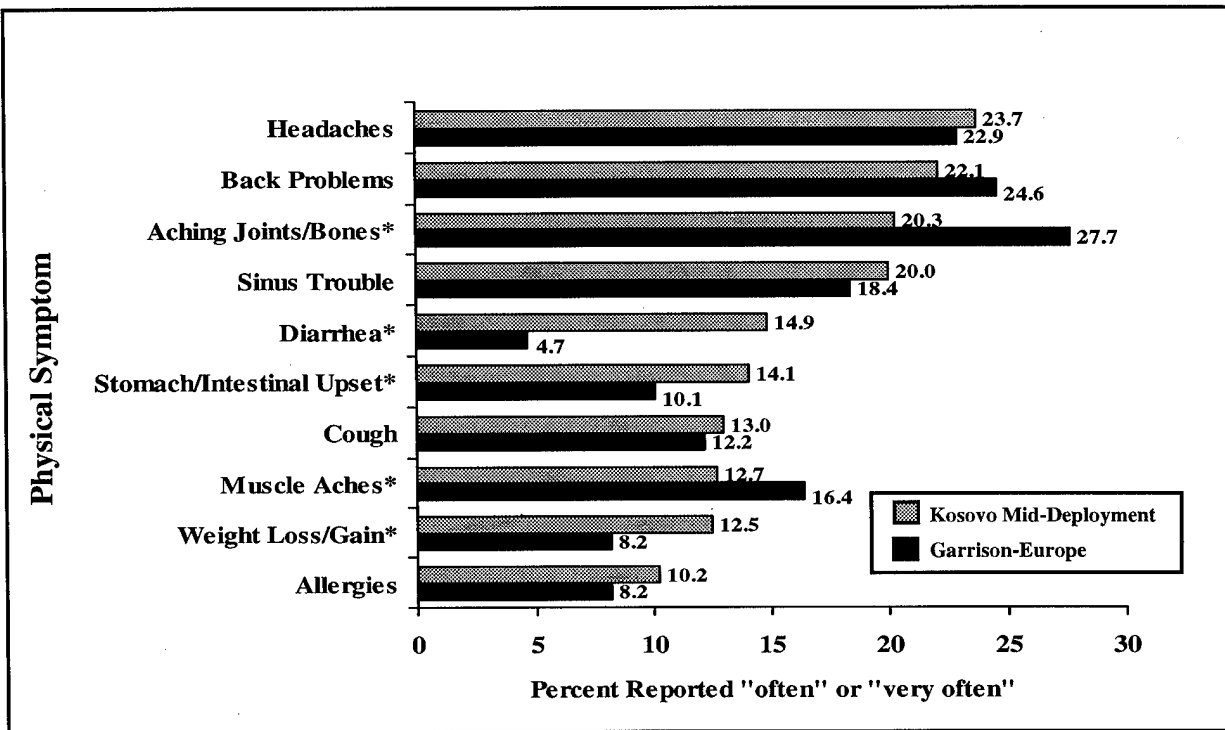


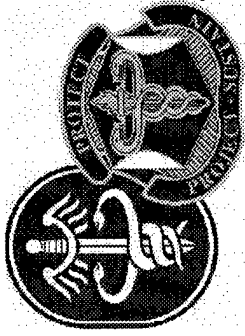












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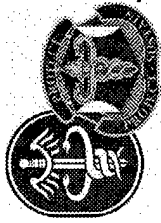
# **Soldier Dimensions and Operational Readiness in U.S. Army Forces Deployed to Kosovo**

**Presenter: MAJ Carl A. Castro, Commander, U.S. Army Medical  
Research-Europe, Heidelberg, Germany.**

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June 2000

U.S. Army Medical Research Unit-Europe, Walter Reed Army Institute of Research,  
U.S. Army Medical Research and Materiel Command



## **Study Execution and Comparison Studies**

- A Human Dimensions Research Team from Heidelberg, Germany, collected data on-site at Camp Able Sentry, Camp Bondsteel, Camp Monteith, and remote sites from 4-7 OCT 99.
- The mid-deployment assessment examined mission, organizational, physical, and psychological health indicators. Both survey and interview data were collected.
- Total Number of Kosovo Mid-Deployment Surveys Completed: 1,718
- Number of soldier and leader interviews conducted: 15
- Comparison Data sets: In this report, results of the Kosovo mid-deployment assessment are compared to the results of other studies conducted by the USAMRU-E.
  - Kosovo Pre-Deployment Soldier Study--MAR/APR 1999 (N = 2,094)
  - Bosnia Mid-Deployment Study (Operation Joint Endeavor) --JUN 1996 (N = 1,038)
  - USAREUR OPTEMPO Study (Garrison Phase)--JUN-AUG 1999 (N = 768)
  - CONUS Study--JAN 1997 (N= 2,731)
  - Soldier Burnout Study--JUL 1997 (N = 2,256)



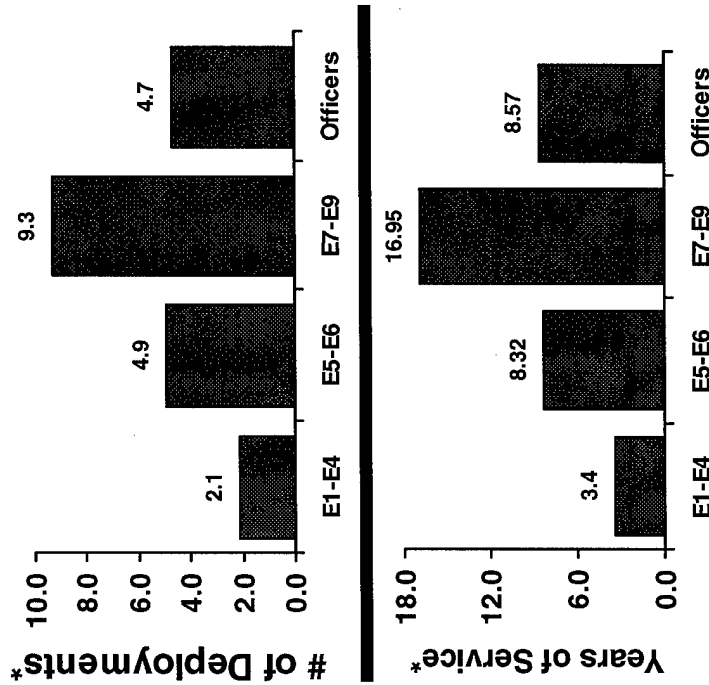
# Deployment Tempo ( 1 of 2)

## OPTEMPO EQUATION:

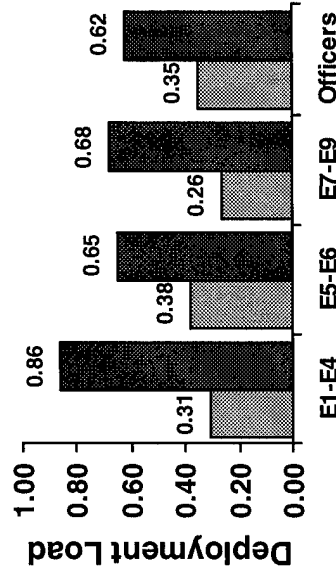
$$\text{Deployment Load} = \frac{\text{\# of Deployments}}{\text{Years of Military Service}}$$

- Although there were no rank differences in deployment load during pre-deployment, there were rank differences in deployment load during mid-deployment.

- Junior enlisted personnel had higher deployment load rates than other personnel [ $F(3, 1606)=3.13, p<.001$ ].



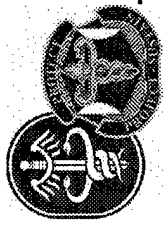
\*  $p < 0.001$



## Rank (Kosovo Mid-Deployment)

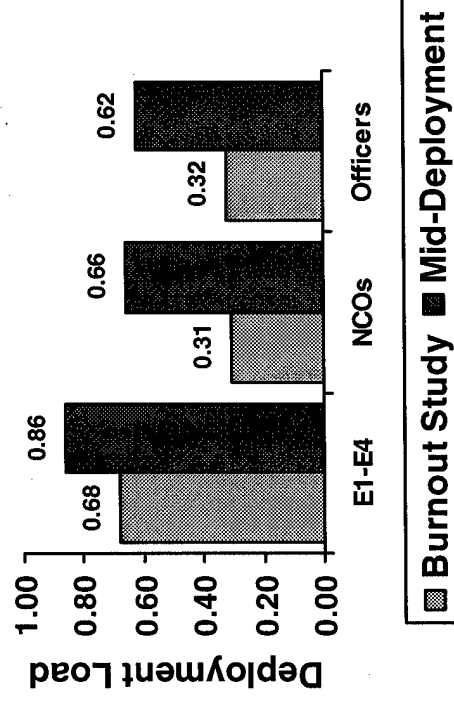
E1-E4	53.0%	E5-E6	29.1%
E7-E9	5.4%	Officers	12.5%

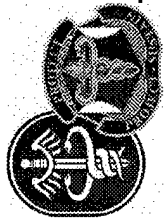




## Deployment Tempo (2 of 2)

- The deployment load index for soldiers deployed to Kosovo were the highest ever recorded. For all ranks, junior enlisted, NCOs, and officers, the deployment load was extremely high.
- The previous record for the highest deployment load was also held by soldiers from the 1st ID (Burnout Study), who deployed to Bosnia in support of Operation Joint Guard (OJG).

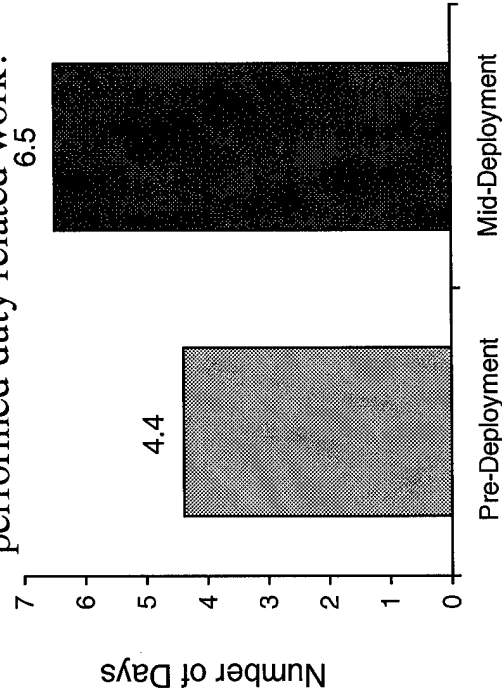




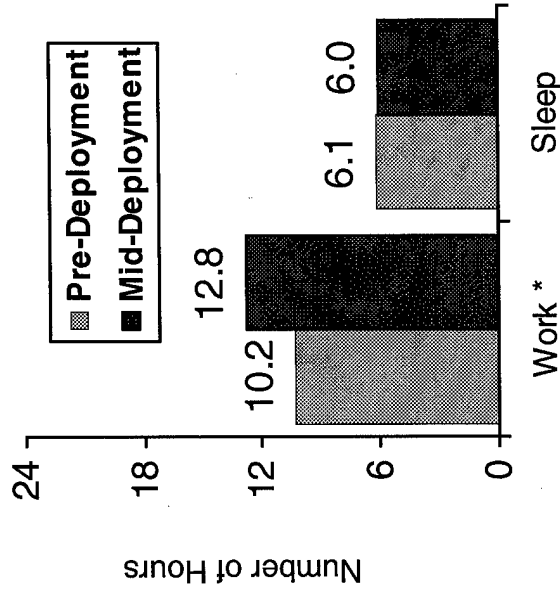
## Workload and Sleep

- Workload was based on the number of days and hours that soldiers and leaders reported working while in garrison and while deployed to Kosovo.
- Soldiers deployed to Kosovo reported working longer hours [ $t(353)=17.73, p<.001$ ] and more days per week [ $t(344)=10.79, p<.001$ ] compared to when they were in garrison (i.e., pre-deployment).
- Although workload has increased, the number of hours of sleep has not significantly changed.

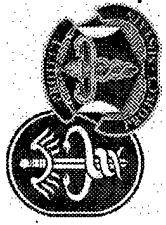
In the past week, how many days have you performed duty related work?\*



In the past week, what is the average number of hours per day of:



\* $p<.001, N=344$  (matched data set pre- and mid-deployment)

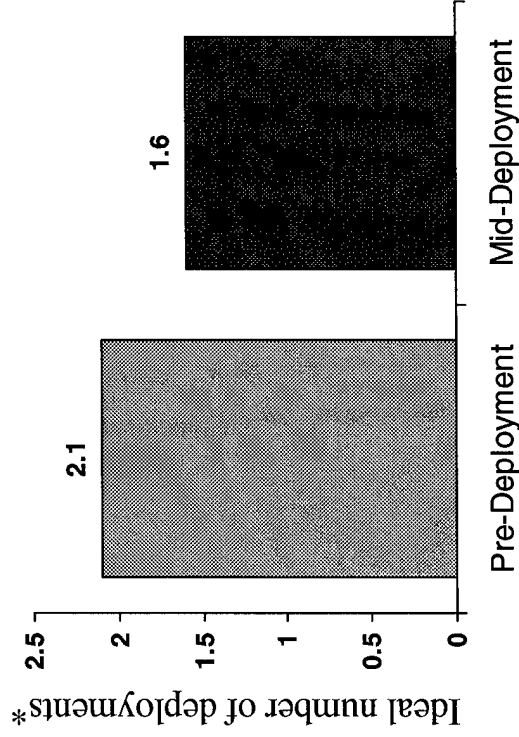


# Soldier Attitudes: Military Deployments

## Number of Deployments

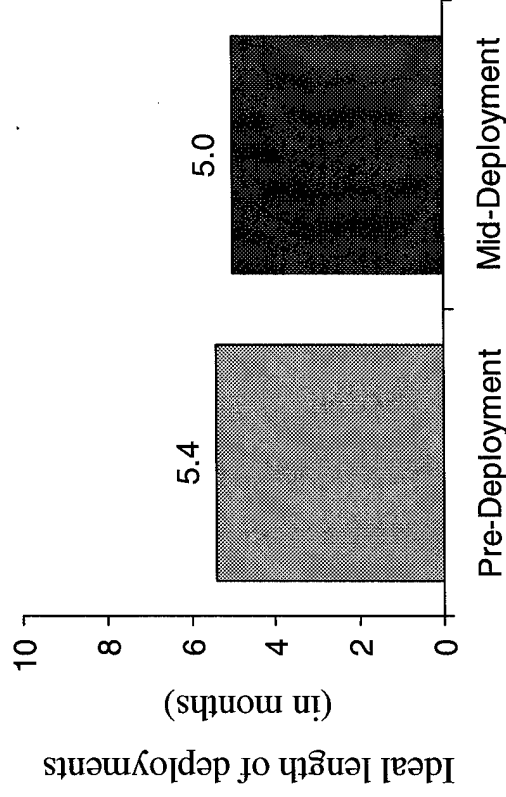
- Soldiers reported that 1 to 2 deployments within a three-year period is ideal.
- Soldiers had a lower ideal number of deployments when they responded during deployment than prior to deployment

[ $t(357)=9.98, p<.001$ ].



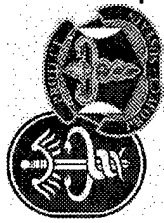
## Deployment Length

- Soldiers reported that a deployment should last about 5 months.
- Soldiers reported similar ideal deployment lengths regardless of whether they responded during deployment or prior to deployment.



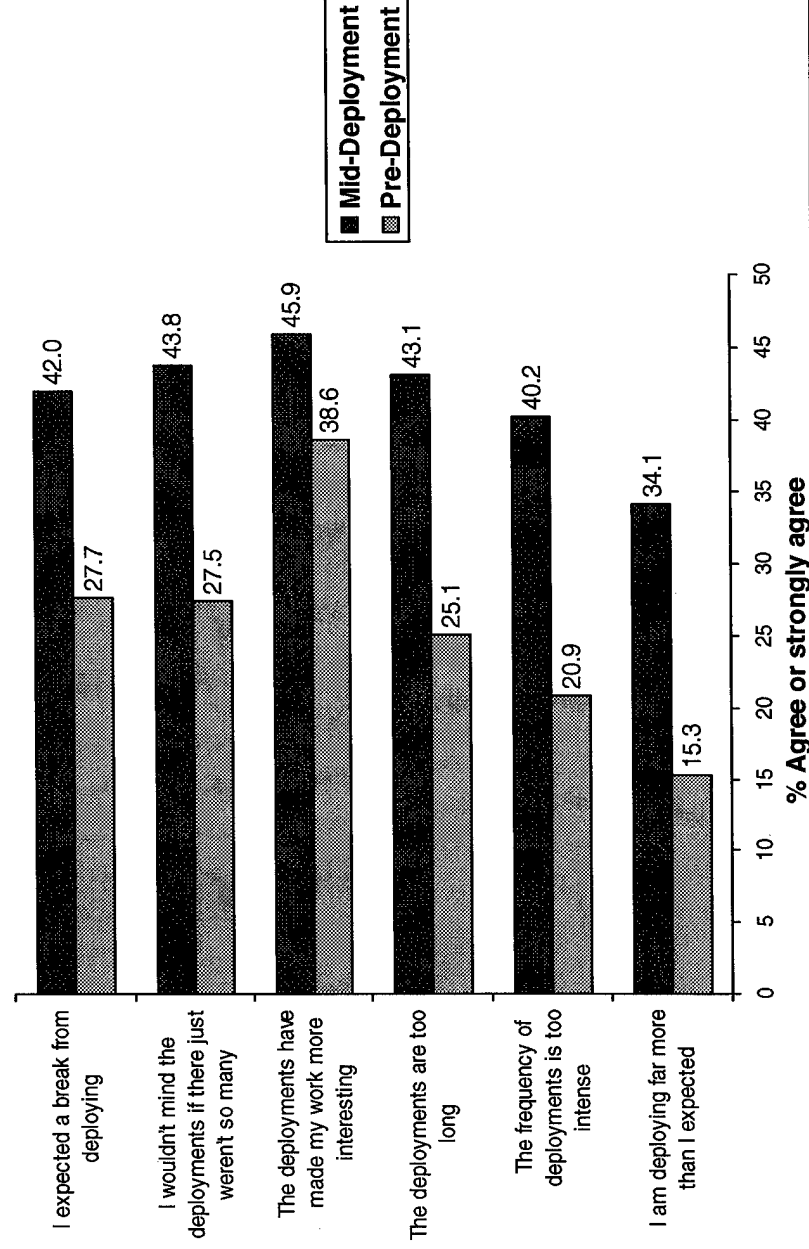
\* $p<.001, N=361$

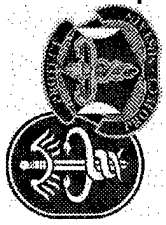
Average time deployed in Kosovo at the time of assessment was 3.3 months.



## Soldier Attitudes: Military Deployments (1 of 2)

- Soldiers' attitudes about military deployments were much more negative while they were deployed to Kosovo (mid-deployment) than before they deployed (pre-deployment) [all  $ps < .01$ ].
- However, soldiers did find their work more interesting as a result of being deployed [ $p < .01$ ].



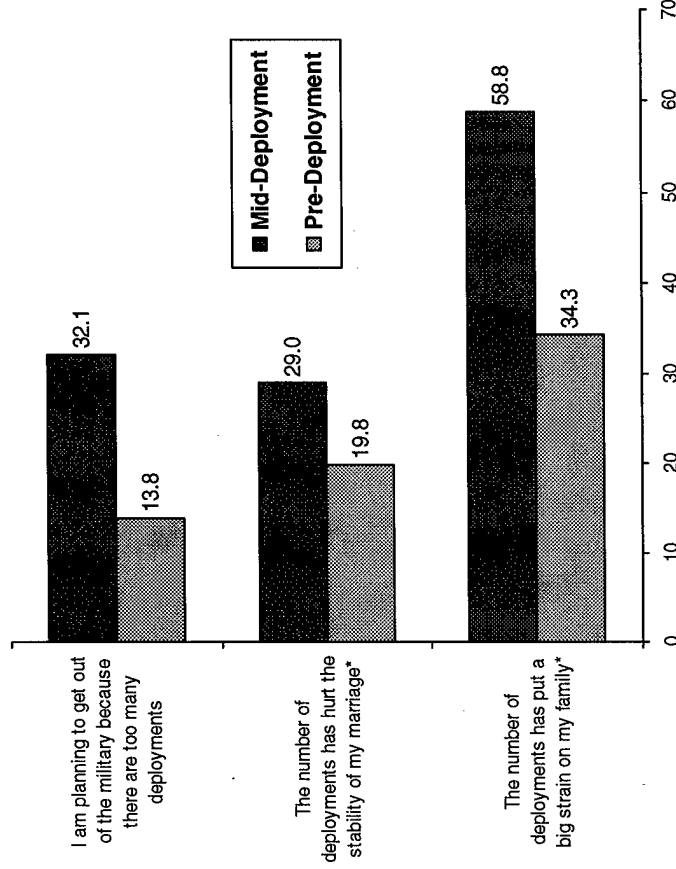


## Soldier Attitudes: Military Deployments ( 2 of 2)

- More soldiers reported during the mid-deployment assessment that the number of deployments hurt the the stability of their marriage and placed a big strain on their family [all  $ps < .01$ ].
- More soldiers also reported during the mid-deployment assessment that they planned to leave the military because there are too many deployments [ $p < .01$ ].

### Marital Status of Samples

	Pre	Mid
Single	41.4%	39.2%
Married	51.7%	52.8%
Separated	2.8%	2.7%
Divorced	4.1%	5.2%



\*The responses only apply to married personnel.

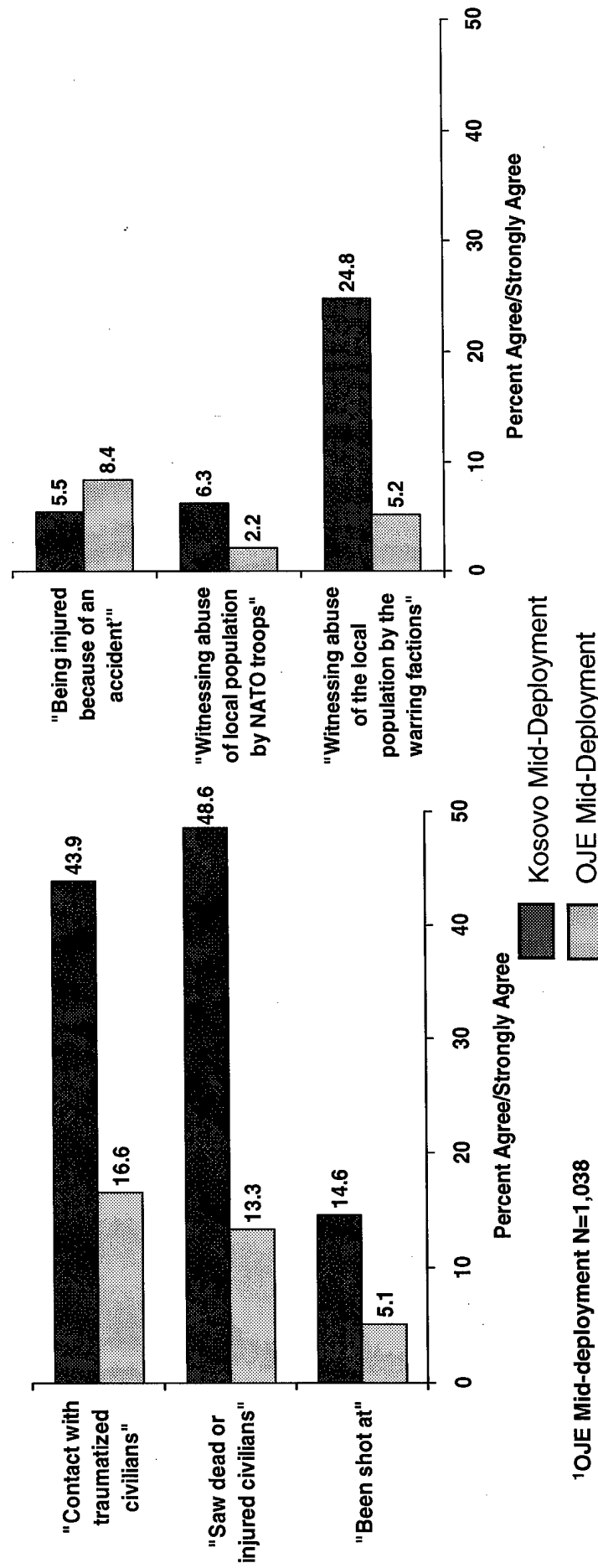
June 2000

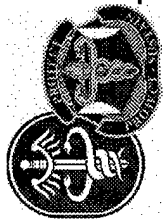
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# Traumatic Experiences: Kosovo vs. Bosnia

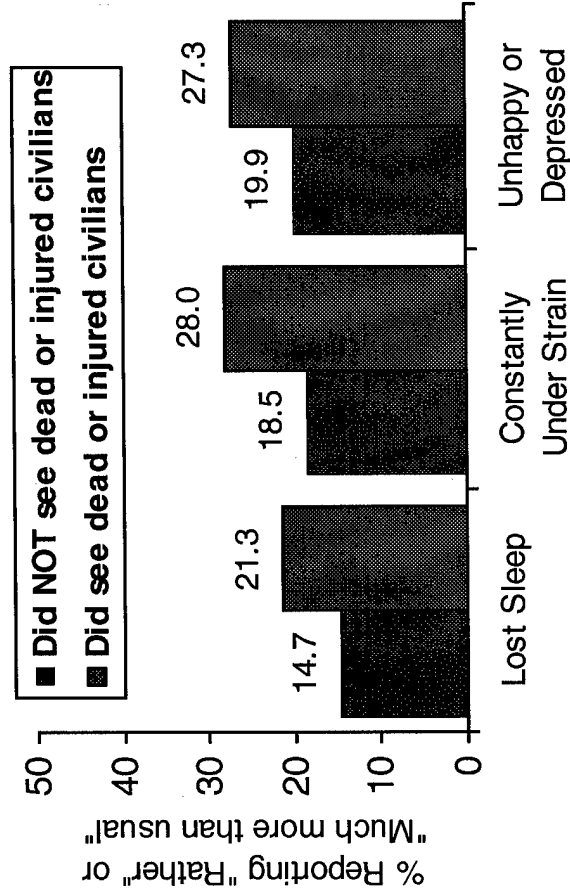
- Soldiers deployed to Kosovo reported being exposed to traumatic or violent events at a much higher rate than soldiers deployed to Bosnia as part of OJE.
- Soldiers in Kosovo also reported lower injury rates due to accidents compared to those soldiers deployed to Bosnia.

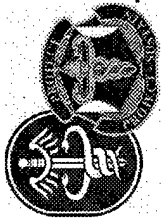




## Traumatic Experiences and Depression

- Soldiers deployed to Kosovo who reported exposure to violent or traumatic events had higher rates of depression [ $p < .001$ ].
- Soldiers who saw dead or injured civilians were more likely to report that they lost sleep, were constantly under strain, and were depressed [ $p s < .001$ ].
- There were no significant differences in depression rates for soldiers who had aided in the removal of unexploded ordnance [ $t(1689) = 1.33, p = .184$ ] or the removal of human remains [ $t(1691) = 1.37, p = .173$ ].





## Well-Being in Kosovo

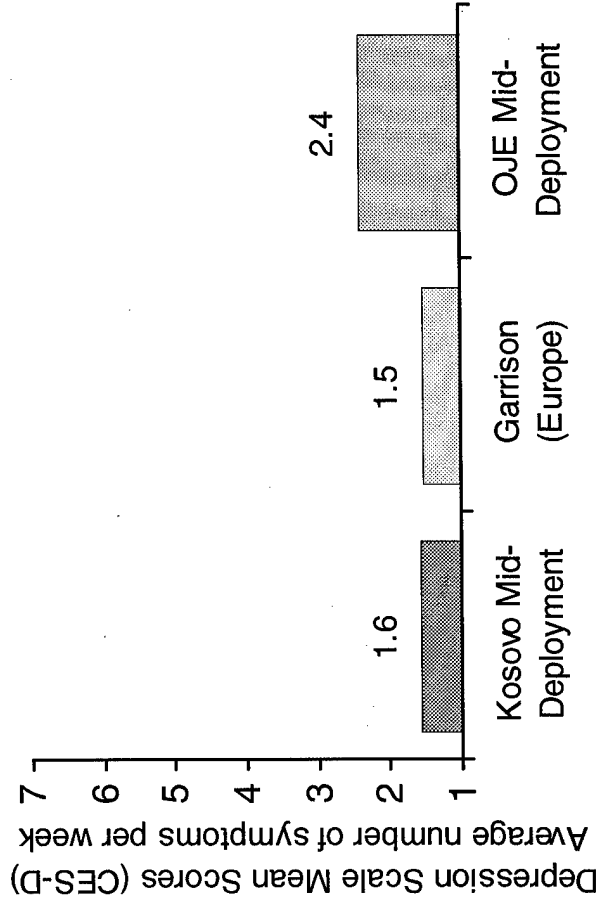
### MORALE

- 71.1% of soldiers reported good morale (medium to very high).
- Although morale is high, soldiers are feeling the impact of the deployment.

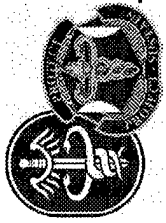
### BURNOUT

- 73.8% of soldiers reported that they were either burned out (high or very high) or beginning to feel burned out (medium).

- Soldiers deployed on the Kosovo mission had similar depression scores as those soldiers in the OPTEMPO Garrison study [ $t(2486)=0.982, p=.326$ ].
- Both the soldiers in Garrison and those deployed to Kosovo report lower depression scores than did those soldiers deployed to Bosnia (OJE).

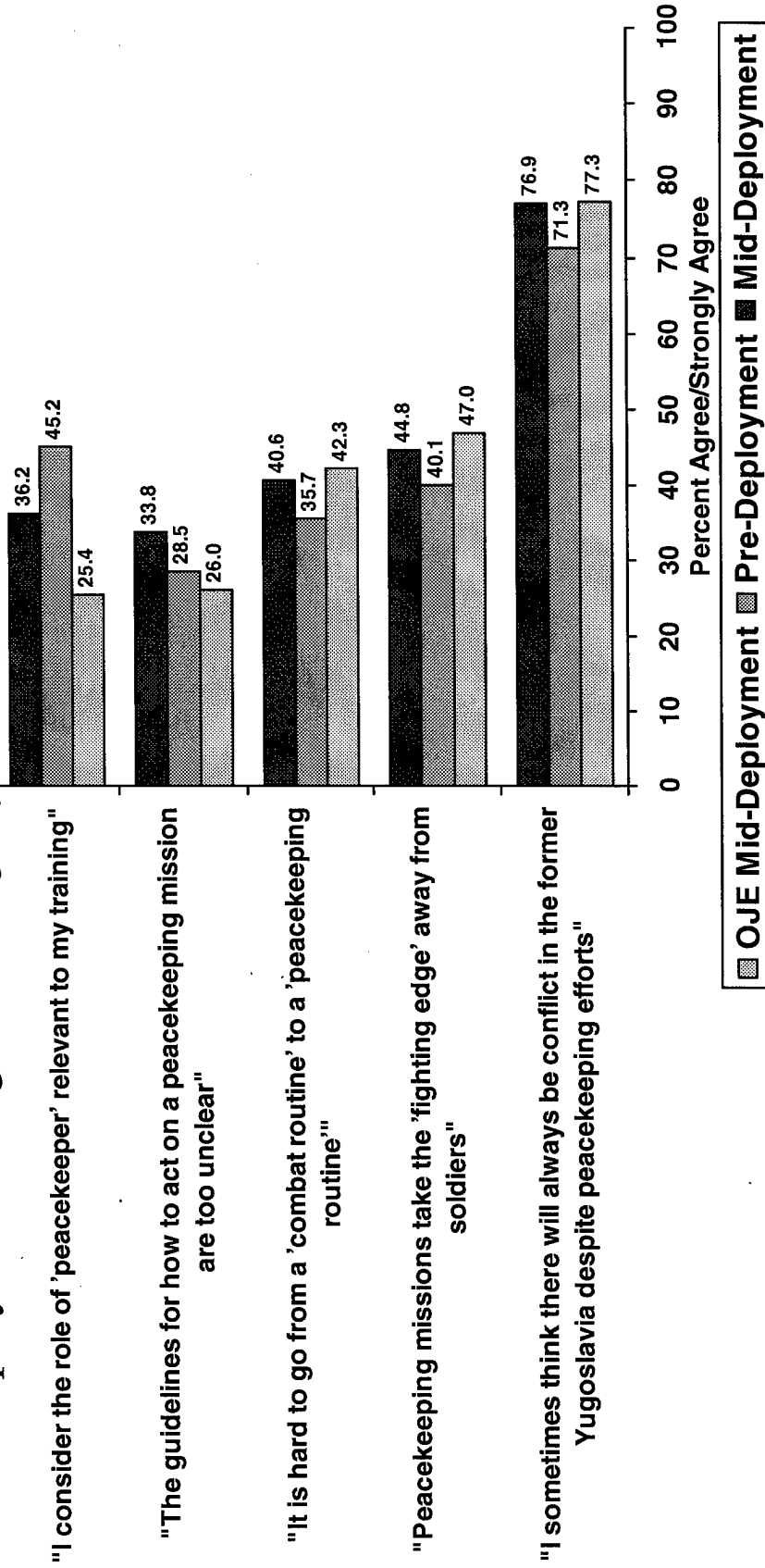






# Soldier Attitudes: Peacekeeping

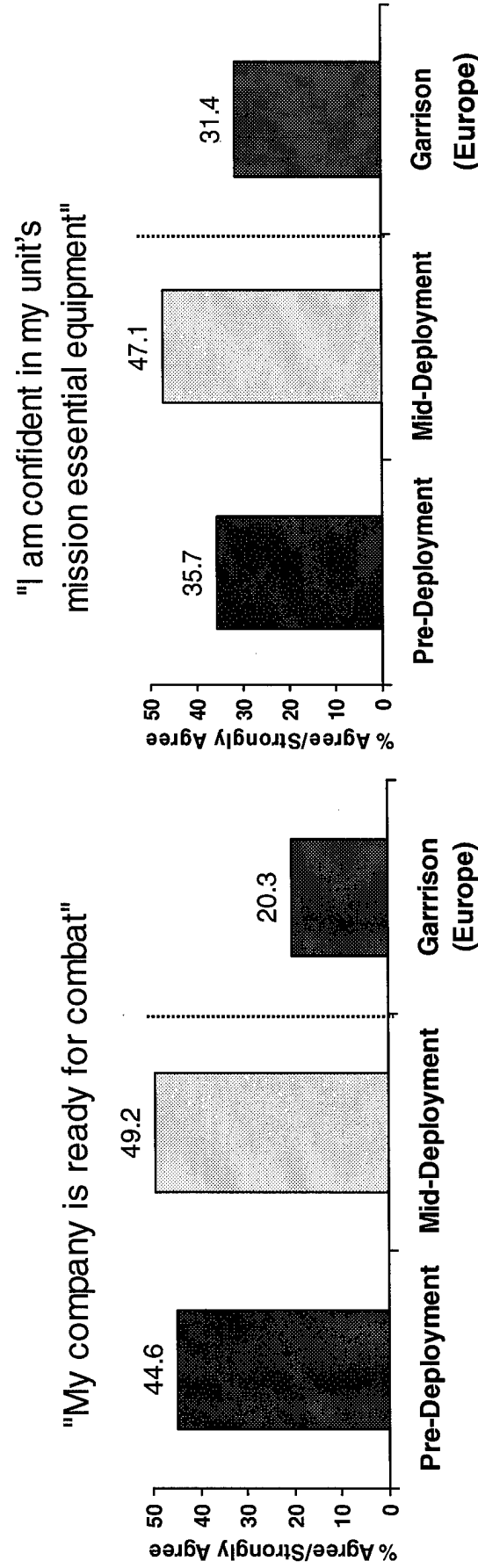
- At mid-deployment more soldiers expressed a negative view of peacekeeping missions when compared to the pre-deployment sample [all ps<.01].
- Relative to peacekeeping attitudes during OJE mid-deployment, Kosovo mid-deployment ratings were slightly more positive.

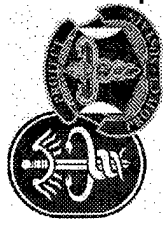




# Soldier Attitudes: Military Readiness

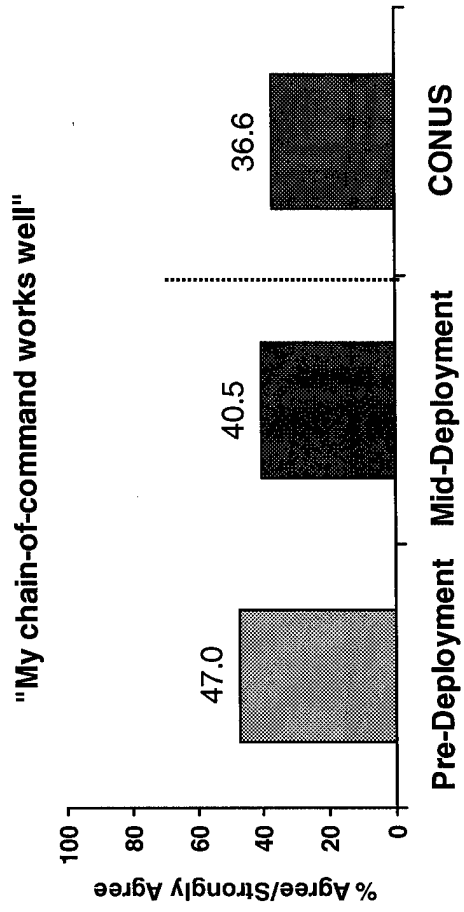
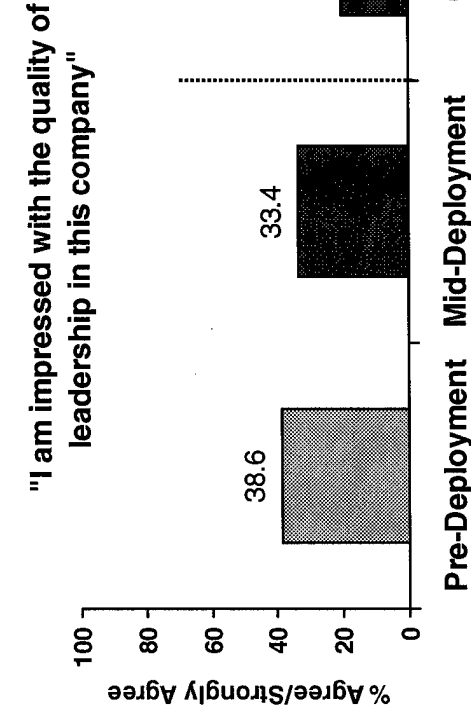
- Soldiers deployed to Kosovo reported that their unit's operational readiness was higher than before they deployed [ $t(7,780)=3.98, p<.001$ ].
- For example, more soldiers deployed to Kosovo reported that their company was ready for combat [ $X^2(1, N=3,768)=7.84, p<.01$ ] and that they had confidence in their unit's mission essential equipment [ $X^2(1, N=3,774)=17.0, p<.001$ ] compared to before deployment.





## Soldier Attitudes: Unit Leadership (1 of 2)

- Unit leadership was assessed by asking soldiers about the quality of leadership in the unit, how well the leaders would perform in combat, and how well the chain-of-command functions.
- Soldiers were less confident in their unit's leadership at the Kosovo mid-deployment assessment than at the pre-deployment assessment [ $t(3,744)=4.53$ ,  $p<.001$ ].
- However, both the Kosovo pre- and mid-deployment assessments of leadership were higher than the CONUS norm.



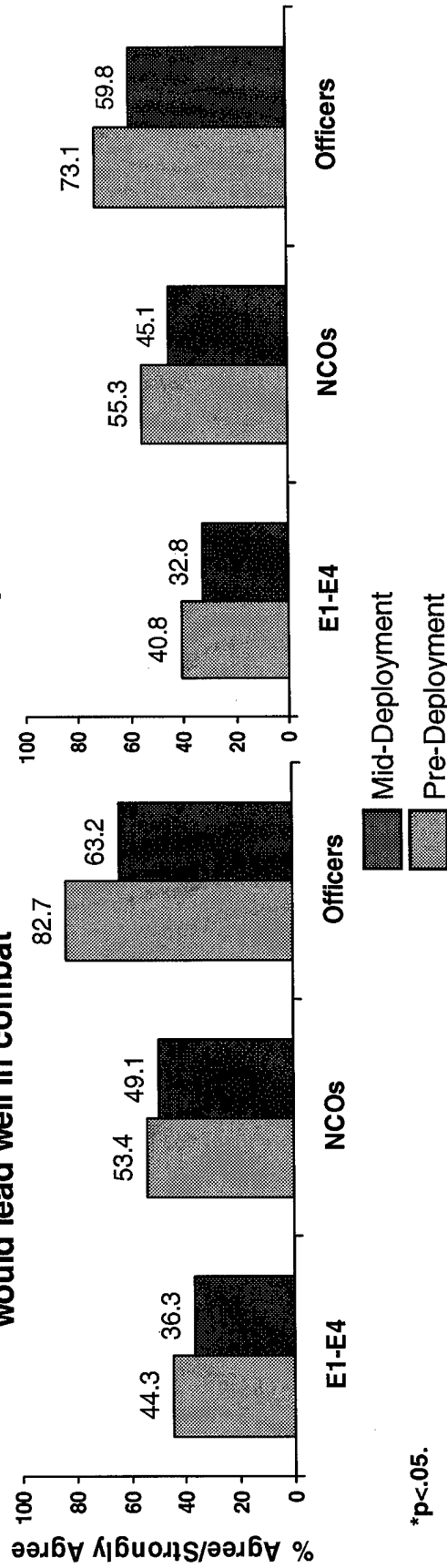


## Soldier Attitudes: Unit Leadership (2 of 2)

Rank		Pre	Mid
E1-E4		64.8%	53.0%
NCOs		28.5%	34.5%
Officers		6.7%	12.5%

- The general decline in soldier's attitude regarding unit leadership was due to junior enlisted, NCOs, and officers **all** viewing unit leadership less favorably.
- Soldiers of higher rank viewed unit leadership higher.

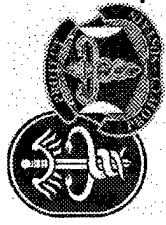
"The leaders in this company would lead well in combat"\*



\*p<.05.

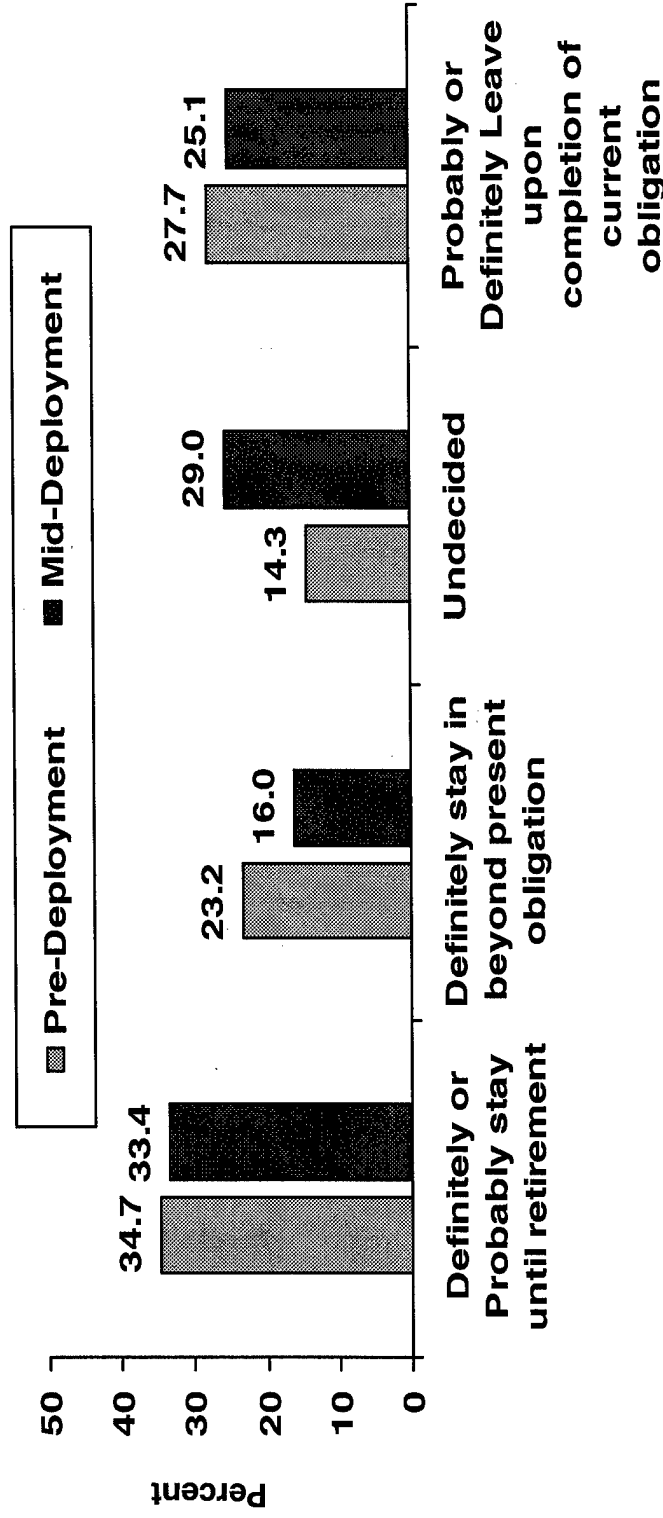
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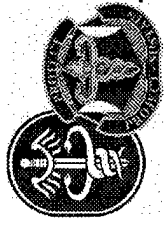
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## Soldier Career Intentions

- The rate of soldiers who intend to make the Army a career did not change significantly from pre- to mid-deployment. During pre-deployment, 34.7% of the soldiers reported that they would definitely or probably stay in the military until retirement vs. 33.4% of the soldiers during mid-deployment.
- However, at mid-deployment more soldiers were undecided about their career intentions than at pre-deployment [ $\chi^2(3, N=3,525)=81.34, p<.001$ ].



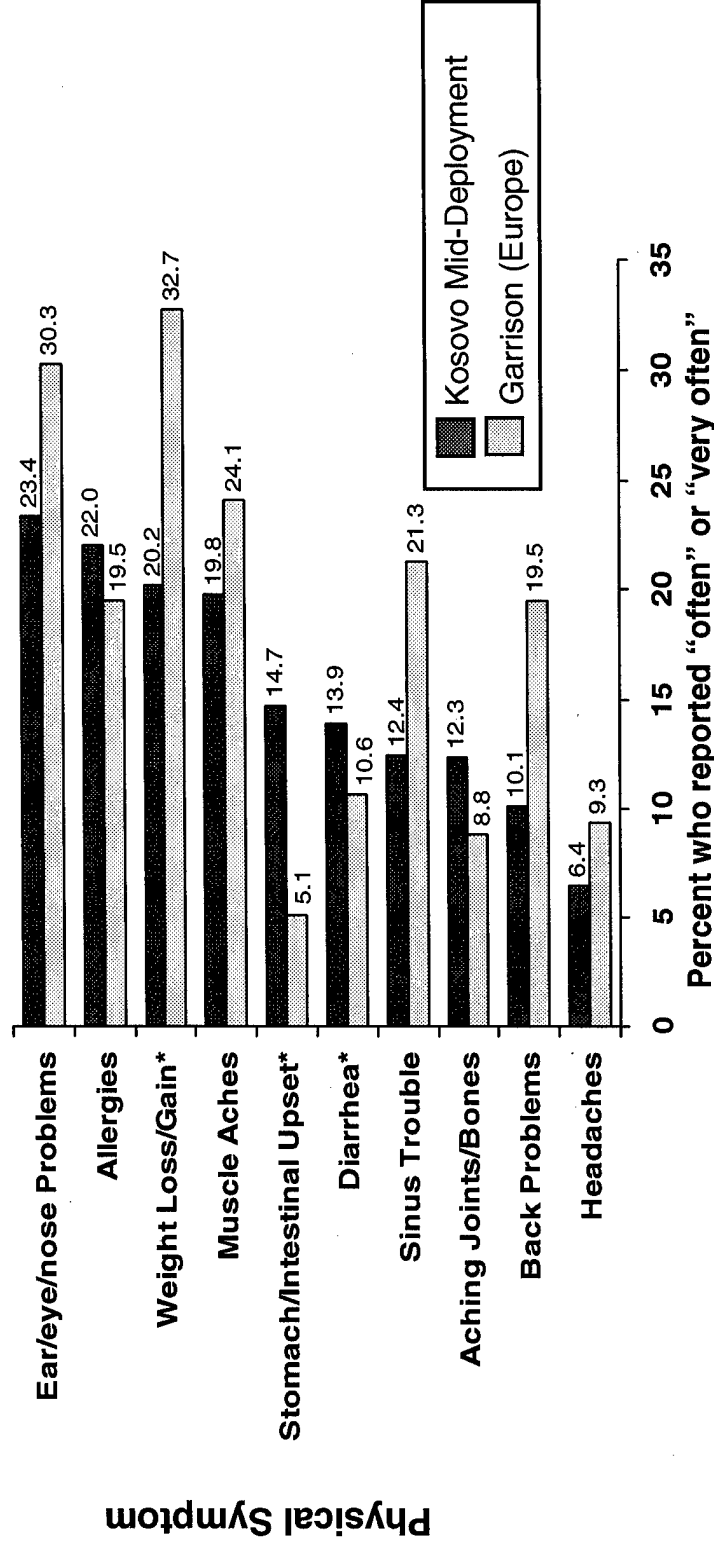


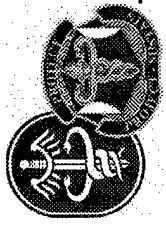
## Physical Symptoms

- Soldiers deployed to Kosovo reported fewer physical symptoms than those soldiers in garrison (Europe). Soldiers in Kosovo reported an average of 2.1 physical symptoms compared to 2.5 symptoms for soldiers in garrison (Europe)

[ $t(2,484)=2.9, p<.01$ ].

- Soldiers deployed to Kosovo did report more stomach/intestinal upset, diarrhea, and less weight loss/gain than soldiers in Garrison [ $ps < .05$ ].

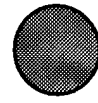




## Quality of Life Rating Scale

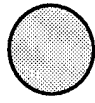
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- Soldiers' perspective of the quality of life (or services) during the Kosovo deployment was assessed using a 10-item scale.
- Soldiers' perspectives were converted to a green, amber, or red rating.
- The following conversion was adopted:



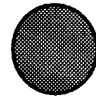
A green rating was given if only 0-19% of the soldiers rated the service as bad or very bad.

Excellent Service  
or Support



An amber rating was given if 20-24% of the soldiers rated the service as bad or very bad.

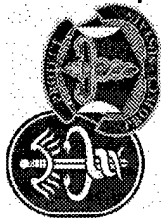
Service or Support  
Area May Need  
Improvement



A red rating was given if 25% or more of the soldiers rated the service as bad or very bad.

Service or Support  
Needs Improvement











- The red rating was based on the simple notion that if one-fourth (25%) or more of soldiers report that a service is bad, then efforts should be directed to improve it.



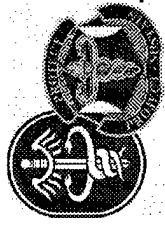
## Quality of Life During Deployment

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- Over three-quarters (77.8%) of soldiers reported that the quality of life in their unit was good (medium to very high).
- More specifically, five of the ten services received green ratings, two services received amber ratings, and three received red ratings.

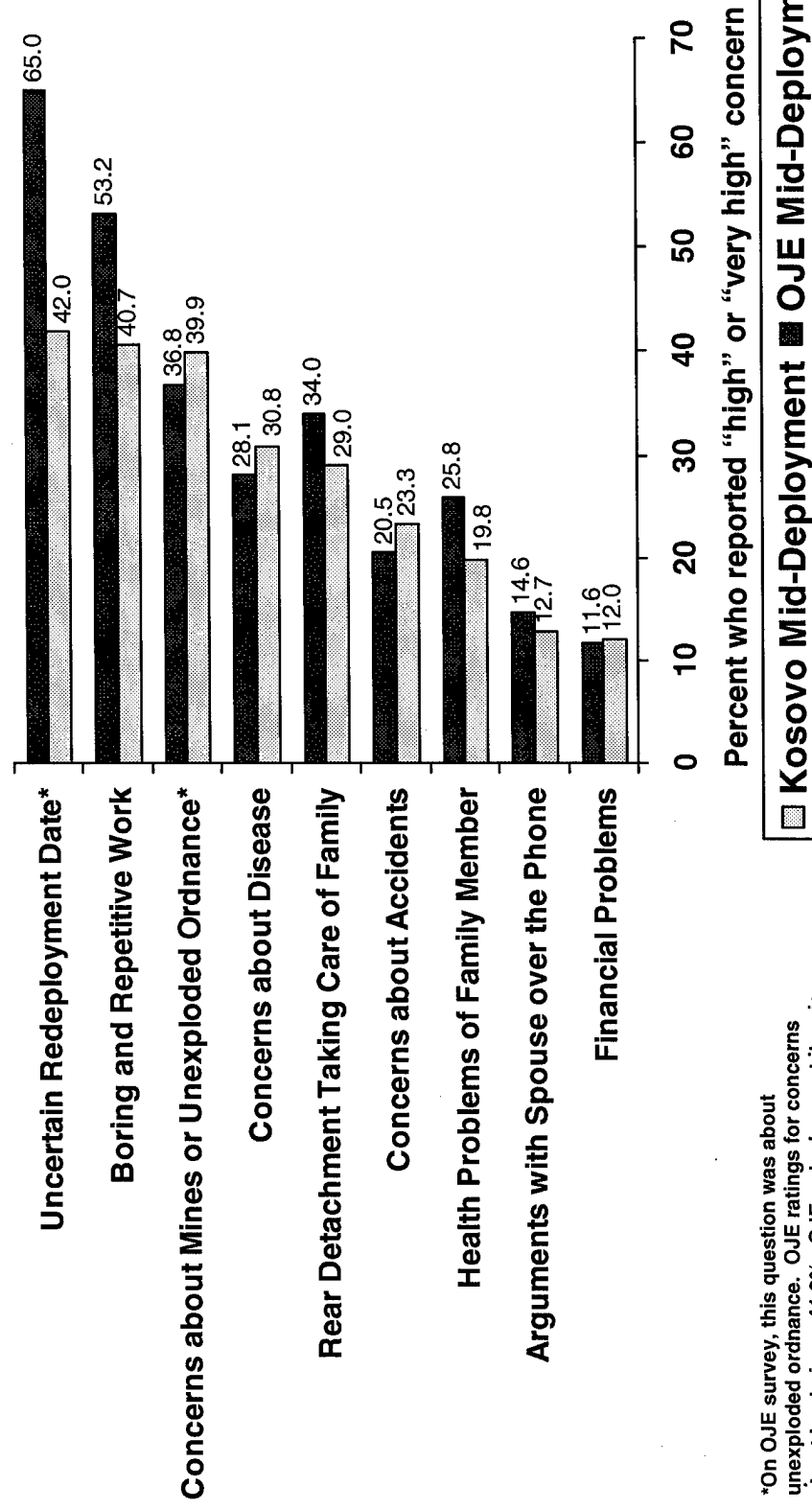
	<b>Living Conditions</b>		<b>Mail Services</b>
	<b>M-W-R Activities</b>		<b>Food</b>
	<b>Religious Services</b>		<b>Telephone Services</b>
	<b>News/Information</b>		<b>Continuing Education Opportunities</b>
	<b>AAFES</b>		<b>Media Coverage of the Mission</b>

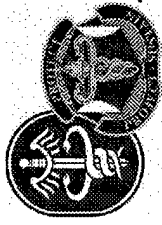




## Soldier Concerns

- Soldiers' top concerns or stressors are similar to those expressed by soldiers on other peacekeeping missions (e.g., Operation Joint Endeavor).





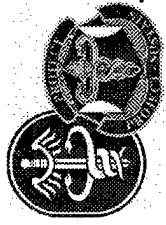
## **Soldier and Leader Interviews (1 of 2)**

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The USAMRU-E Research Team conducted on-site interviews and observations with 1st ID soldiers. Soldiers interviewed were in units with security and patrol missions in local communities. Interviews consisted of separate group interviews with junior enlisted and NCOs, as well as company leader interviews.

During the interviews, soldiers raised the following points:

- **Leadership.** Overall, soldiers have a very positive view of their leadership at the company level, both NCO and officer. Soldiers would prefer to have less turnover among unit officers during peacekeeping missions.
- **K+90.** Soldiers have a negative view of the outcome of the K+90 negotiations with the UCK. Soldiers expressed the view that an armed Albanian force makes the peacekeeping environment in Kosovo more dangerous.
- **Pass Policy.** Soldiers would like a pass policy that allows them to visit local communities during their off-duty hours. They noted different standards among KFOR forces and within the U.S. Army in regard to alcohol use and off-duty freedoms.



## Soldier and Leader Interviews (2 of 2)

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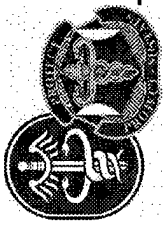
- **Mail.** Soldiers noted that mail service has been slow which resulted in financial difficulties for some soldiers.
- **Prospects for Mission Success.** Soldiers noted extreme hostility remaining between Albanian and Serb ethnic groups in Kosovo and expressed doubt that these groups would be able to live together in peace without KFOR presence.
- **Relations with Local Population.** Soldiers characterized relations with local ethnic groups as generally positive. In units where interviews were conducted U.S. soldiers have established effective rapport with local civilians.
- **Time with Family.** Due to training exercises and the current deployment, soldiers interviewed have spent little time with the families since late last year.
- **Equipment Readiness.** Soldiers reported that it is difficult to obtain parts for heavy equipment.



## Conclusions and Recommendations (1 of 3)

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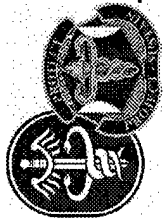
- Overall, the Kosovo force looks pretty good. There are, however, indicators and areas of concern.
- The deployment tempo and workload of these 1st ID soldiers are extremely high, and this high tempo is having an adverse impact on soldiers' career intentions and on their families.  
**Recommendation:** Upon returning to garrison (Europe) these units should be given a 2-3 month break from major training exercises and at least a 6 month break from future deployments.
- The physical and psychological health of the soldiers is relatively good. However, soldiers are experiencing numerous violent and/or traumatic events that can affect their future mental health.  
**Recommendation:** Approximately one month after returning home, conduct a Task Force-wide mental health assessment similar to the one conducted by 1st AD after they returned from Kosovo. Include a mental health screen, education, and follow up. Encourage spouse involvement and participation.
- Although soldier ratings of leadership have decreased since deploying to Kosovo, they are still relatively high. In addition soldier morale is high, and soldiers truly believe that they are contributing to the success of the mission.  
**Recommendation:** Don't be overly concerned about the decline in soldiers' perceptions of leadership; a similar pattern was also observed for the Bosnia deployment with leadership perceptions increasing once soldiers returned to home station. Do ensure that soldiers are properly recognized and rewarded for their contributions to the mission.



## Conclusions and Recommendations (2 of 3)

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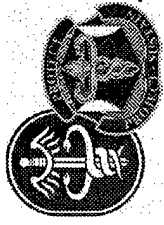
- Soldiers are not convinced that the peacekeeping mission in Kosovo will ultimately succeed. Many soldiers view the K+90 as a failure and feel betrayed by the senior leadership (both military and political) because the K+90 agreement was not enforced.  
**Recommendation:** Tell the soldiers what the U.S.'s long-term strategy is in Kosovo. Let them know how they are contributing to the mission's long-range success. Involve as many senior leaders and officials as possible.
- Mail services are a problem for some soldiers. These soldiers report that they either don't receive packages at all or there are long delays in delivery. Some soldiers even report receiving damaged (i.e., "crushed") packages.  
**Recommendation:** A bottom-up review of the mail system might be in order. Involve the soldiers themselves in this review if possible.
- Telephone services are also a problem for many soldiers, especially at the remote sites where telephone access is difficult. Contacting family members who don't live near an Army installation is also difficult. (There appears to be problems associated with using Air Force and Navy installation telephone operators.)  
**Recommendation:** Establish a program that will allow soldiers to contact, free-of-charge, immediate family members who don't live near an Army installation.



## Conclusions and Recommendations (3 of 3)

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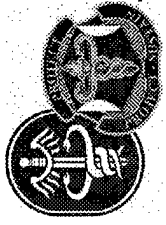
- Soldiers are very interested in continuing education opportunities. They are especially concerned about this issue during deployments as they feel they are falling behind their peers in civilian and military education.  
**Recommendation:** Let soldiers know what opportunities are available to them now, and what opportunities will be available for them in the future.
- The policy on passes and leave is unclear or unpopular. Soldiers would like passes reinstated in order to visit local shops and restaurants. Soldiers are concerned that there is no clear policy regarding leave. This is especially important to soldiers deployed for longer than 6 months.  
**Recommendation:** Publish a clear pass and leave policy. Ensure that soldiers know what the policy is.



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U.S. Army Medical Research and Materiel Command